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     (FILE 'HOME' ENTERED AT 10:36:32 ON 23 MAR 2002)

     INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
     BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO,
CABA,
     CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
     DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 10:36:57 ON
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              52   FILE CABA
              90   FILE CAPLUS
               7   FILE CEABA-VTB
               2   FILE CIN
               1   FILE CONFSCI
              50   FILE DGENE
               1   FILE DRUGLAUNCH
               1   FILE DRUGMONOG2
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               4   FILE GENBANK
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              23   FILE USPATFULL
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               6   FILE WPINDEX
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     FILE 'PROMT, CAPLUS, SCISEARCH, MEDLINE, BIOSIS, PASCAL, AGRICOLA'
     ENTERED AT 10:38:11 ON 23 MAR 2002
L2             7 S L1(S)BETA-GALACTOSIDASE
L3             2 DUP REM L2 (5 DUPLICATES REMOVED)
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L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:284076 CAPLUS
DOCUMENT NUMBER: 134:309806
TITLE: Lactose hydrolysis using recombinant lactic acid bacteria producing high levels of .beta.-galactosidase
INVENTOR(S): Ruch, Frank E.
PATENT ASSIGNEE(S): Protein Scientific, Inc., USA
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001027247	A2	20010419	WO 2000-US41121	20001006
WO 2001027247	A3	20011018		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-158668P P 19991008
US 2000-542121 A1 20000404

AB The invention features methods and compns. for rapidly and effectively hydrolyzing lactose using recombinant lactic acid bacteria that produce high levels of .beta.-galactosidase, permeabilizing the bacteria such that lactose can enter the cell and be hydrolyzed by the highly concd. .beta.-galactosidase contained herein. The invention further features a reduced lactose diary product, e.g., milk. The invention features also lactase microcarriers as an oral prophylactic against the clin. condition of lactose intolerance.

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
ACCESSION NUMBER: 1998:811148 CAPLUS
DOCUMENT NUMBER: 130:205817
TITLE: Nisin independent induction of the nisA promoter in Lactococcus lactis during growth in lactose or galactose
AUTHOR(S): Chandrapati, Sailaja; O'Sullivan, Daniel J.
CORPORATE SOURCE: Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN, 55108, USA
SOURCE: FEMS Microbiol. Lett. (1999), 170(1), 191-198
CODEN: FMLED7; ISSN: 0378-1097
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Nisin biosynthesis is autoregulated extracellularly by the mature and modified peptide. To investigate other regulatory effects on nisin biosynthesis, a transcription fusion of the nisA promoter from Lactococcus lactis ATCC 11454 to the promoterless lacZ gene from Streptococcus

thermophilus was constructed. This fusion construct, pDOC99, expressed .beta.-galactosida[redacted] in L. lactis ATCC 11454 growi[redacted]in M17 medium contg. glucose (M17G). C[redacted]sistent with the known model fo[redacted] transcription of **nisA**, pDOC99 did not express .**beta**.-**galactosidase** in the non-nisin producer, L. lactis LM0230 grown in M17G, unless the nisRK genes (cloned in pDOC23) were included in trans and nisin was added to the medium. Growth of this strain in M17 contg. lactose or galactose, resulted in nisA transcription, even in the absence of exogenous nisin. This expression was independent of pDOC23. Furthermore, nisA transcription in L. lactis LM0230(pDOC99) grown in M17G could be induced by the addn. of exogenous galactose, with max. induction occurring at concns. 5 mM.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 13
ACCESSION NUMBER: 1988:568937 CAPLUS
DOCUMENT NUMBER: 109:168937
TITLE: Fermentation of lactose by Zymomonas mobilis carrying a Lac+ recombinant plasmid
AUTHOR(S): Yanase, Hideshi; Kurii, Junn; Tonomura, Kenzo
CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Osaka, 591, Japan
SOURCE: J. Ferment. Technol. (1988), 66(4), 409-15
CODEN: JFTED8; ISSN: 0385-6380
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Lac+ recombinant plasmids encoding a .**beta**.-**galactosidase** fused protein and lactose permease of Escherichia coli were introduced into Z. mobilis. The fused protein was expressed with 450 to 5860 **Miller units** of .**beta**.-**galactosidase** activity, and functioned as lactase. Raffinose uptake by Z. mobilis CP4 was enhanced in the plasmid-carrying strain over the plasmid-free strain, suggesting that the lactose permease was functioning in the organism. Z. mobilis Carrying the plasmid could produce EtOH from lactose and whey, but could not grown on lactose as sole C source. Its growth was inhibited by either galactose or the galactose liberated from lactose.

L9 ANSWER 15 OF 19 FSTA COPYRIGHT 2002 IFIS
ACCESSION NUMBER: 1997(02):B0111 FSTA
TITLE: Characterization of an oxygen-dependent inducible promoter system, the nar promoter, and Escherichia coli with an inactivated nar operon.
AUTHOR: Jintae Lee; Moo Hwan Cho; Jongwon Lee
CORPORATE SOURCE: Correspondence (Reprint) address, Jongwon Lee, Dep. of Biochem., Sch. of Med., Catholic Univ. of Taegu-Hyosung, 3056-6, Daemyung 4-Dong, Nam-Gu, Taegu 705-034, Korea. Tel. 82-53-650-4471. Fax 82-53-621-4106
SOURCE: Biotechnology and Bioengineering, (1996) 52 (5) 572-578, 22 ref.
ISSN: 0006-3592
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The nar promoter of Escherichia coli, which is optimally induced in the presence of nitrate under anaerobic conditions, was characterized in order to ascertain its usefulness as an inducible promoter. The nar promoter was expressed in an E. coli strain having a mutant nar operon which does not express active nitrate reductase. A plasmid containing the lacZ gene, expressing .**beta**.-**galactosidase**, instead of the structural genes of the nar operon was used to assay induction of the nar promoter. Optimal conditions for nar induction were analysed. Results showed that induction of the nar promoter was optimal when E. coli was grown initially in the presence of 1% nitrate. Expression of the lacZ gene was not affected by molybdate ions. The amount of .**beta**.-**galactosidase** per cell and per medium vol. was max. when E. coli was grown under aerobic conditions to an optical density (at 600 nm) of 1.7; induction of the nar promoter was observed by lowering dissolved O.sub.2 concn. to microanaerobic levels (1-2%). After approx. 6 h induction, specific .**beta**.-**galactosidase** activity was 36 000 **Miller units**, equivalent to 35% of total cellular proteins, which was confirmed by SDS-PAGE. The specific activity of .**beta**.-**galactosidase** expressed from the nar

L9 ANSWER 14 OF 19 FSTA COPYRIGHT 2002 IFIS
ACCESSION NUMBER: 1996(06):B0141 FSTA
TITLE: High-level expression of lacZ under control of the tac
or trp promoter using runaway replication vectors in Escherichia coli.
AUTHOR: Kidwell, J.; Kolibachuk, D.; Dennis, D.
CORPORATE SOURCE: Correspondence (Reprint) address, D. Dennis, Dep. of Biol., James Madison Univ., Harrisonburg, VA 22807, USA
SOURCE: Biotechnology and Bioengineering, (1996) 50 (1) 108-114, 24 ref.
ISSN: 0006-3592
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The Escherichia coli lacZ gene, encoding .**beta**.-**galactosidase**, was placed under control of the trp or tac promoter in the runaway replication vectors pRA95 and pRA96, in which copy number is thermally regulated. Expression of lacZ was examined in transformed cells containing these plasmids. Increasing the temp. increased expression of the lacZ gene; 41.degree.C was the optimum temp. for thermal induction of gene expression. Induction of gene expression using isopropyl-.beta.-D-thiogalactopyranoside (IPTG) or 3-.beta.-indoleacrylic acid IAA did not significantly enhance thermal induction of gene expression. In thermally induced strains harbouring the tac promoter, a lag period of approx. 1.5 h was observed prior to .**beta**.-**galactosidase** production; no apparent lag was observed in strains possessing the trp promoter. Max. .**beta**.-**galactosidase** levels (up to 46 000 **Miller units**) were produced using a trp promoter on pRA96, having a basal copy number of 10; enzyme levels

L9 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 11
ACCESSION NUMBER: 1996:175149 CAPLUS
DOCUMENT NUMBER: 124:222089
TITLE: High-level expression of lacZ under control of the tac
or trp promoter using runaway replication vectors in Escherichia coli
AUTHOR(S): Kidwell, John; Kolibachuk; Dennis, Douglas
CORPORATE SOURCE: Dep. Biol., James Madison Univ., Harrisonburg, VA, 22807, USA
SOURCE: Biotechnol. Bioeng. (1996), 50(1), 108-14
CODEN: BIBIAU; ISSN: 0006-3592
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To det. the utility of coupling runaway replication to the expression of cloned genes under the control of strong promoters, lacZ transcriptional fusions to the trp or tac promoter (Ptrp or Ptac) were constructed using plasmids in which the copy no. is thermally regulated. Cells contg. these plasmids were able to produce .**beta**.-**galactosidase** to levels between 3700 and 46,000 **Miller units** when induced only by a temp. upshift. The addn. of the appropriate chem. inducer, either IPTG (isopropyl-.beta.-D-thiogalactopyranoside) or IAA (3-.beta.-indoleacrylic acid), did not significantly enhance the thermal induction. The Ptac-controlled and Ptrp-controlled lacZ induction differed slightly in that the Ptac-controlled thermal induction exhibited a lag of approx. 1.5 h as compared to both chem. and thermal induction, whereas in the case of Ptrp-controlled induction, an increase in .**beta**.-**galactosidase** expression above background occurred at approx. the same time regardless of the means of induction. The best vector, a Ptrp-controlled lacZ fusion carried on a runaway replication vector having a basal copy no. of 10, was able to mediate the expression of .**beta**.-**galactosidase** to approx. 40,000 **Miller units** of .**beta**.-**galactosidase** comprising 25% of the total cell protein at 17 h postinduction under optimal conditions for protein yield. In these cells, lysis occurred as lacZ was maximally expressed. Under noninducing conditions, the plasmids were stable for at least 60 generations in the absence of antibiotic in

L9 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 7
ACCESSION NUMBER: 1998:803860 CAPLUS
DOCUMENT NUMBER: 130:205625
TITLE: Development of a plasmid vector for overproduction of .**beta**.-**galactosidase** in Escherichia coli by using genetic components of groEx from symbiotic bacteria in Amoeba proteus
AUTHOR(S): Lee, Jung Eun; Ahn, Eun Young; Ahn, Tae In
CORPORATE SOURCE: Department of Biology Education, Seoul National University, Seoul, 151-742, S. Korea
SOURCE: J. Microbiol. Biotechnol. (1998), 8(5), 509-516
CODEN: JOMBES; ISSN: 1017-7825
PUBLISHER: Korean Society for Applied Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A plasmid vector, pXGPRMATG-lac-Tgx, was developed for overprodn. of .**beta**.-**galactosidase** in Escherichia coli using the genetic components of groEx, a heat-shock gene cloned from symbiotic X-bacteria in Amoeba proteus. The vector is composed of intragenic promoters P3 and P4 of groEx, the structural gene of lac operon, transcription terminator signals of lac and groEx, and ColE1 and amp' of pBluescript SKII. The optimized host, E. coli DH5.alpha., transformed with the vector constitutively produced 117,310-171,961 **Miller units** of .**beta**.-**galactosidase** per mg protein in crude ext. The amt. of enzyme in crude ext. was 53% of total water-sol. proteins. About 43% of the enzyme could be purified to a specific activity of 322,249 **Miller units**/mg protein after two-fold purifn., using two cycles of pptn. with ammonium sulfate and one step of gel filtration. Thus, the expression system developed in this study presents a low cost and simple method for purifying

L3 ANSWER 38 OF 45 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 91:688106 SCISEARCH
THE GENUINE ARTICLE: GV187
TITLE: THE BACTERIOCIN LACTOCOCCIN-A SPECIFICALLY INCREASES **PERMEABILITY** OF LACTOCOCCAL CYTOPLASMIC MEMBRANES IN A VOLTAGE-INDEPENDENT, PROTEIN-MEDIATED MANNER
AUTHOR: VANBELKUM M J (Reprint); KOK J; VENEMA G; HOLO H; NES I F; KONINGS W N; ABEE T
CORPORATE SOURCE: UNIV GRONINGEN, DEPT GENET, KERKLAAN 80, 9751 NN HAREN, NETHERLANDS (Reprint); NLVF, MICROBIAL GENE TECHNOL LAB, N-1432 AS, NORWAY; UNIV GRONINGEN, DEPT MICROBIOL, 9751 NN HAREN, NETHERLANDS
COUNTRY OF AUTHOR: NETHERLANDS; NORWAY
SOURCE: JOURNAL OF BACTERIOLOGY, (1991) Vol. 173, No. 24, pp. 7934-7941.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 36

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Lactococcin A is a bacteriocin produced by **Lactococcus lactis**. Its structural gene has recently been cloned and sequenced (M. J. van Belkum. B. J. Hayema, R. E. Jeeninga, J. Kok, and G. Venema, Appl. Environ. Microbiol. 57:492-498, 1991). Purified lactococcin A increased the **permeability** of the cytoplasmic membrane of L. lactis and dissipated the membrane potential. A significantly higher concentration of lactococcin A was needed to dissipate the membrane potential in an immune strain of L. lactis. Lactococcin A at low concentrations (0.029-mu-g/mg of protein) inhibited secondary and phosphate-bond driven transport of amino acids in sensitive cells and caused efflux of preaccumulated amino acids. Accumulation of amino acids by immune cells was not affected by this concentration of lactococcin A. Lactococcin A also inhibited proton motive force-driven leucine uptake and leucine counterflow in membrane vesicles of the sensitive strain but not in membrane vesicles of the immune strain. These observations indicate that lactococcin A makes the membrane **permeable** for leucine in the presence or absence of a proton motive force and that the immunity factor(s) is membrane linked. Membrane vesicles of Clostridium acetobutylicum, Bacillus subtilis, and Escherichia coli were not affected by lactococcin A, nor were liposomes derived from phospholipids of L. lactis. These results indicate that lactococcin A acts on the cytoplasmic membrane and is verv specific towards lactococci. The combined results obtained with cells, vesicles, and liposomes suggest that the specificity of lactococcin A may be mediated by a receptor protein associated with the cytoplasmic membra